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Compensation for Damages Caused by Robot

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A B S T R A C T

Compensation for robot damage is considered the next stage for the establishment of civil liability for those damages, and that the injured person here, like any injured person, has the right to compensation, where compensation is considered a penalty or in exchange for damage.

A R T I C L E I N F O

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1. Introduction.

The civil liability on the basis of which the compensation entails is achieved, either it is judicial, according to which people have the right to resort to the judiciary to claim protection of their rights and interests and since the person harmed by the robots who claims that he has the right to compensation, the result of this claim is that this harmed person has the right to resort to the judiciary to claim what he claims.However, this method of compensation is not correct in reality with some cases that appear constantly in the modern era as a result of the industrial revolution, including the damages of robots that are characterized by their seriousness and the difficulty in assessing the risks resulting from them. This called on legislators in various countries to search for new systems, in order to provide appropriate protection for those affected, to enable them to obtain compensation for the damage that befell them without great difficulty and exorbitant costs, and this is what is called automatic compensation.

2. Statement of the Problem.

The study problem revolves around whether the methods of estimating compensation referred to by the general rules in the Iraqi Civil Law No. (40) for the year 1951 are sufficient to cover the damages of the robot, but the reality is not correct in some cases, so it is resorted to the complementary mechanisms for compensation.

3. Importance of Study.

Today, robots make decisions, and programming robots has reached the point where they can show physical abilities such as cleaning and performing surgeries, but the robot has not yet reached the level of physical and mental capabilities that a person possesses. As for the theoretical importance, it lies in the scarcity

of research and specialized scientific references, due to the state's interest in intelligence and judicial rulings on responsibility for the actions of the artificial robot in general, with the aim of benefiting from these modern technologies in various fields.

4. Study Methodology.

In order to try to answer the problem of the study and discuss it, the researcher relied mainly because there is no legislative regulation that regulates the actions of robots in Iraq, two descriptive and analytical approaches, so the general rules of the Iraqi civil law were addressed, by referring to the texts of the civil law of the comparison countries, and by examining foreign books and judicial rulings.

5. Methods for Estimating Compensation for Robot Damages.

Compensation is the judge's means of redressing the damage by erasing or mitigating it. Compensation is an amount of money or any satisfaction of the same type as the damage equal to the loss suffered by the harmed person and what he lost in terms of gain that were a natural result of the illegal act. It is subject to the discretion of the judge, and he is free to do so on the condition of causation, and the principle is that the compensation is complete, that is, the value of the compensation is associated with the actual damage, provided that it does not exceed its real value and that the person is not compensated twice for the same damage. Compensation may be in kind or in return, and the latter may be monetary or non-monetary, and circumstances surrounding the incident in the case should be taken into account when assessing compensation, as well as taking into accounts the situation of the perpetrator and the victim (Keeton, 1978, 78-89).

5.1. Methods of Compensation for Damage to Robot.

The damage is remedied or repaired in accordance with what is indicated by the general rules, either by means of in-kind compensation, meaning restoring the situation to what it was before the damage occurred, which leads to removing the damage as much as possible or the damage is remedied by means of compensation in return, which is obtained either by paying a cash amount to the injured person commensurate with the amount of the damage he suffered, and it may be done in the form of performing a specific matter, and it is called non-monetary compensation (Al-Barawi, 2008, 33-76).

In-kind compensation means restoring the situation to what it was before the act that led to the damage occurred, for example, if a post is published on a social networking site from an account managed by artificial intelligence indicating that the foodstuff factory named as such uses expired materials, this post will entail a decline in the factory's sales, which will lead to its loss. In such a case, the damage can be remedied by means of in-kind compensation, by deleting the first publication and publishing a publication on the same page indicating that his previous publication was incorrect and that the aforementioned factory is a factory that relies on technical assets, the subsequent publication from the account managed by the artificial intelligence program will be compelled to damage the previous publication, so the compensation in this case will be of the same type as the damage (Al-Naimat, 2006, 96-147).

If the harm caused by the robot is a moral harm, as in the case of the infringement of artificial intelligence entities and programs on the private lives of people by processing or publishing their personal data without permission, it is not possible to restore the situation to what it was before the damage occurred (Kalra & Anderson, 2009, 95-107).

A summary of the foregoing, in-kind compensation for robot damage is applicable within the scope of material damage, and difficult to apply in terms of moral damage. In material damage, the situation may be restored to what it was before the damage occurred, and thus achieve the purpose of the compensation claim, and in moral damage, if restoring the situation to what it was was impossible, the in-kind compensation mitigate the severity of the damage suffered by the injured party (Al Zaro, 2020, 88-123).

Compensation in return for damage to the robot Compensation in return may be monetary or non-monetary, and monetary compensation is the origin in the tort, and the compensation may be in exchange for non-monetary, and in this case it is represented by the performance of a specific matter. There may be no difficulty in monetary compensation for material damage, but the difficulty arises in cases of compensation for moral damage in that moral damage cannot be compensated with cash.There is no connection between the psychological pain resulting from the assault on a person's dignity and status and money, just as the moral

damage is non-material damage, so how can it be compensated financially by estimating it in cash (Twaig, 2019, 58-67).

Despite the arguments put forward by the trend advocating the inability to pay monetary compensation for moral damage, the other trend showed that there is no justification for granting monetary compensation for material damage without moral damage, which is the most correct one. Money, as it is a means of circulation, is the best means of correcting damages, whether material or moral. In cases where it is not possible to return the situation to what it was, recourse to monetary compensation cannot be waived, regardless of the type of damage and whatever its cause (El-Menyawy, 2008, 43-45).

The Iraqi legislator explained in the civil law the methods of compensation, and Article (209) stipulates that "1- The court shall determine the method of compensation according to the circumstances, and it is correct that the compensation be in installments or a tidy revenue, and in this case it is permissible to oblige the debtor to provide insurance. "Compensation is estimated in cash, so that the court may, depending on the circumstances and at the request of the aggrieved party, order the return of the situation to what it was, or order the performance of a specific matter or the refund of the same in homosexuals as a way of compensation.", this text is the legal basis for specifying the method of compensation, whether in kind or in return, according to the circumstances of the case before the judge. The text also indicated that monetary compensation is the basis for compensation. If the injured person requests compensation in kind, i. for the damage, the court responded to the request of the aggrieved party. However, this compensation is often not applicable, especially in redressing the damages resulting from the robot, so there is nothing left for the injured person except to request compensation in return, which represents the introduction of a new value in the debt of the injured person equivalent to that lost due to the harmful act, the latter is the most appropriate in compensating for the damages resulting from the actions of robots, due to the difficulty of restoring the situation to what it was in most cases (El-Din, 1991, 95-98).

5.2. Compensation Mechanism for Robot Damage.

One of the difficulties that the court faces in its judgment in robot damage cases is the estimation of compensation for the damage caused by the intelligent entities. The court's task is to compensate the damage completely, the court may also take into consideration some circumstances or personal considerations that are not related to the damage when estimating the compensation, so the moral aspect of civil liability cannot be excluded. The assessment of compensation in civil liability is dominated by two ideas: the first is the idea of full compensation, and the second is the idea of fair compensation, and the first idea shows that compensation is in the amount of damage, and circumstances have no effect on its assessment, and this is the objective theory in assessing damage, the second idea looks at the circumstances and personal considerations in assessing compensation, and this is the personal theory in assessing damage (Bertolini, 2016, 45-69).

We conclude from the foregoing that the application of the idea of full compensation and estimation of compensation by the amount of damage in cases of robot damage if it is applicable to cases of material damage, as the elements of lost profit and subsequent loss are available, but it is not applicable in cases of moral damage, as the psychological pain and the reputation and dignity of the person are difficult to determine by a specific amount (El-Gamal, 2001, 52-74).

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As for the Iraqi judiciary, its position on the influence of circumstance is evident through the ruling of the Court of Cassation, in which it overturned the ruling of the trial court and clarified, ((The court ruled compensation without showing the bases it relied on for calculating its amount, so it had to in this case seek the help of an expert who has knowledge of the social conditions of the plaintiff's family)), It is understood from its decision that the Court of Cassation has implicitly acknowledged the influence of circumstantial circumstances on estimating compensation, and that the Iraqi judiciary calls for the assistance of experts when estimating it, and infers from the call for the assistance of experts in estimating compensation; the expert will take into consideration, in his estimation of compensation, the circumstances surrounding the incident, whether those related to the victim, the perpetrator, or other circumstances that accompanied the incident (El-Menyawy, 2008, 43-45).

The question arises about the damages of robots covered by compensation? Which scope of compensation does it include compensation for material and moral damage? Material damage is all that befalls a person with

regard to his money, his body, his right, or his legitimate interest. Moral damage is everything that befalls a person in his moral entity, and it includes what is inflicted on the person in terms of sensory or psychological harm as a result of prejudice to his life, body, financial consideration, freedom, honor, reputation, or social or literary status, by addressing the applications of artificial intelligence, we found that they may cause material harm, as in the case of a robot attacking the user and causing him physical harm, or the damage caused by accidents of self-driving cars (Al-Naimat, 2006, 96-147). The robot also causes moral damage, as is the case in the artificial intelligence programs used for social networking pages that offend a user in publishing them, or as in the digital platforms that have the ability to simulate and provide advice, guidance or evaluations, in which the private life of individuals can be attacked or harmed (Kalra & Anderson, 2009, 95-107). The person responsible for compensating the damages of the robots is obligated to compensate the material and moral damage, in addition to compensating the recurrent material damage that befalls the persons who were supported by the injured person and who were deprived of support due to the murder or death of their breadwinner, this is what was stipulated in Article (203) of the Iraqi Civil Law No. (40) of 1951 that "In the case of murder and in the case of damage, the person liable for death due to injury or any other harmful act shall be the one who is responsible for compensating the persons who were supported by the injured person and who were deprived of support due to murder and death.", Likewise, the apostate moral harm that befalls spouses and those close to the family, as Article (205/2) of the Iraqi Civil Code states, "It is permissible to order compensation for the spouses and relatives of the family for the moral harm that befalls them because of the death of the injured person". (Al-Barawi, 2008, 33-76).

In 1979, (Robert Williams) was killed while working in the Ford car manufacturing plant by a robot, when he was transporting goods to the warehouse, the robot inflicted physical damage on him that led to his death. This happened because the robot misidentified it, and this incident is the first death of a human being due to artificial intelligence entities, and as a result, Ford paid ten million dollars in compensation to the family of the deceased for the repercussive damage they suffered, these rules are the same as those set out by the French legislator in the civil law, while the European Directive on Liability for Defective Products 374/85 issued on July 25, 1985 left the option to the national legislator to stipulate compensation for moral damage or leave it, as for his position in the Civil Law for Robots issued on February 16, 2017, it included compensation for material and moral damage, and the compensation for material damage is estimated according to the loss suffered by the victim and the lost gain that was a natural result of the illegal work, as for the moral damage, it is considered an independent and self-contained element, which the court assesses according to each incident in a manner that satisfies the aggrieved (Al Zaro, 2020, 88-123).

6. Automatic Compensation for Damage to Robot.

As the dangers resulting from recent developments have increased, the need has become urgent towards implementing compensation systems that are closer to justice, easier for the aggrieved, and faster in implementation. This is what is done through automatic compensation, and this compensation can be applied through the ideas of insurance and compensation funds.

6.1. Civil Liability Insurance for Robot Damage.

The technical development resulted in the emergence of a range of new risks that affect people's financial assets, due to the establishment of their civil responsibility in the face of third parties, and since insurance is usually done when a person fears a specific risk that threatens him. Liability insurance has emerged as the best way to compensate a person for the damage that befalls his financial responsibility due to the recourse of others to him for compensation and in this sense it is a model of institutional cooperation based on technical and legal foundations between an unspecified group of individuals to face the dangers of civil liability that threaten the financial responsibility of each of them. Liability insurance is defined as a system to avoid losses resulting from accidents, according to which a party called the insurer accepts that the responsibility of the losses incurred by another person called the insured, be transferred to him. The insurance company collects many risks according to the rules of statistics and clearing between them on a scientific basis, in order to be able to fulfill their obligation in the event of the realization of the insured risk, from the premiums achieved by the insured, and thus the insurance is not done except within the framework of a group through the sum of homogeneous risks in a scientifically organized project. The European legislator in the civil law of the robot

has suggested imposing compulsory insurance on the owner or factory of the robot in order to transfer the responsibility from their shoulders, whatever its nature (Bertolini, 2016, 45-69).

Executive Council Decision No. 3 of 2019 regarding the organization of the operational experiment of self-driving vehicles in the Emirate of Dubai stipulated in Article (11) thereof that it is obligatory to insure an artificial intelligence entity. It is a self-driving car, so it stipulates that "the vehicle and its driver are insured under a comprehensive insurance policy against accidents and civil liability, provided that this policy is valid throughout the period of conducting the operational test, and that it is issued by an insurance company licensed to operate in the emirate" (Twaig, 2019, 58-67).

Insurance will not achieve protection for the injured unless it is compelled by the state, so every time the scope of insurance expands, the judiciary automatically tends to expand the non-fault liability, and the amount of this responsibility is not steadfastness alone if the insurance does not stand next to it. The boom in insurance had an impact on the expansion of civil liability in the modern era, as the insurance policy for artificial intelligence entities provides financial protection for material damages and bodily injuries occurring as a result of any accident related to these entities. Among the risks covered are medical expenses and compensation for any person injured by AI entities for all material and moral damages, in addition to the event of damage to those entities if the cause of damage is other entities (Keeton, 1978, 78-89).

The insurance system is one of the effective systems in distributing the costs of the accident, and transferring the cost of compensating the damages from the perpetrators of the harmful act to the insured. Thus, insurance is a solution commensurate with the proliferation of artificial intelligence entities such as robots, self-driving cars, and others. The level of insurance should depend on both the nature of the AI entities and the specific use of them by the consumer, and the entry of the AI entities within the risk they are insured from; it is necessary to change many aspects of traditional insurance, such as a change in the accounts tables because it is expected that there will be a difference in the distribution of accidents, as the tables are set based on the nature of people, either in light of the entry of artificial intelligence entities, they will be set on other bases that suit their nature (El-Din, 1991, 95-98).

For example, the advent of smart cars will reduce accidents compared to those that occur today, but these few accidents will lead to very serious injuries or deaths. This change in the distribution of accidents would affect the economics of insurance, as it would be easier for insurance companies to calculate the expected costs of common accidents compared to rare accidents.

Through the foregoing, it is clear that assessing the risks of robots is very difficult for insurance companies, because the multiplicity of these entities and their differences makes determining the losses a difficult matter. This leads to either refusal to insure some types of AI entities, or to use insurance contracts in their known form, which are often not sufficient to face these new risks, or to impose high insurance premiums, as a result, the spread of these new technologies has been delayed, so new basic conditions should be set for the development of the insurance industry for robots, in line with the risks that accompanied the emergence of these entities, and then the creation of a new insurance market to manage these new risks (El-Gamal, 2001, 52-74).

Jurisprudence has differed regarding the effectiveness of the insurance system to face the damages resulting from artificial intelligence. A second trend of jurisprudence goes to the fact that the insurance system is ineffective in facing the damages resulting from the robot, even if this system saved administrative expenses and avoided judicial errors. However, it increases accidents because there is no deterrent, and robots do not have the legal personality and their actions are unpredictable for their designers, users and operators, in addition to the difficulty of applying the insurance system in its known form, for example, the robot manufacturer may be American, the operator British, and the user Japanese, in addition to the difficulty of calculating premiums and distributing costs.

We believe that the insurance system, despite the negative aspects that have been brought to it, can cover part of the risks arising from artificial intelligence entities, with the development of some of its concepts and principles in accordance with them, without neglecting other systems to cover the rest of the risks, such as the compensation fund system, most accident victims prefer to resort to the insurance system instead of the fault liability system in order to prevent the injured person from being left without compensation due to the fact

that the accident occurred through no fault of anyone or the difficulty of proving the fault on the part of the perpetrator, and many of the affected people may not have the required legal education, so they are I gnorant of their right to file a claim for compensation, and they may refrain from the lawsuit because they are unable to face its expenses (El-Menyawy, 2008, 43-45).

In order to ensure compensation for damages resulting from robots, they must be subject to a compulsory insurance system, and this can only be done by a law similar to what is the case in the Compulsory Auto Insurance Law No. (52) of 1980, we call on the Iraqi legislator to legislate a law for compulsory insurance against robot risks, as the compulsory insurance system guarantees compensation for the injured and facilitates the judge's role in ruling by obligating the official to compensate the injured (Keeton, 1978, 78-89).

6.2. Compensation funds for Robot Damage.

Compensation funds, according to the decision of the European Parliament of February 16, 2017, are a tool to ensure the possibility of compensation for damages in cases for which there is no insurance cover. In fact, this box should be the last resort in case of insurance problems, or for people who own robots and do not have an insurance policy, this is because the traditional rules of civil liability are based on the existence of a person responsible for compensation, and this is not appropriate if we are dealing with risks for which it is impossible to know the person responsible. So the so-called social responsibility appeared in the face of the individual responsibility on which the traditional rules of civil responsibility are based (Al Zaro, 2020, 88-123).

The idea of establishing special funds for compensation was with the aim of compensating the injured in the case in which it is not compensated by another means, in addition to the fact that these funds aim to distribute the risks among a group of practitioners of the activities that could be a cause of these risks. Compensation Fund is defined as the organ that is authorized to disburse certain payments for the benefit of a category of those affected in a special context. These payments have a compensatory nature, and the European legislator stated in the Civil Code of Robots issued on 16-2-2017 that compensation funds are a tool to ensure the possibility of compensation for damages in cases for which there is no insurance cover; these funds should be the last resort in uninsured cases of AI entities. The goal of the existence of compensation funds is not to leave the victim without compensation, in addition to its goal in distributing the risks resulting from the robots to the people who direct the activities that could be the cause of these risks, and these funds do not intervene except in a complementary and backup capacity (Al-Naimat, 2006, 96-147).

In the event that reliance is made entirely on compensation funds without the existence of a compulsory insurance system, these funds will be obligated to compensate all damages for the entities for which they were established, and therefore they will be subject to bankruptcy due to the huge amount of compensation.

The emergence of the idea of compensation funds is related to the principles of valuing human life, and it appeared in the compensation of traffic accidents and medical accidents, as in the special fund created in France for compensation for medical damages (ONIAM), or the Fund for Compensation for Damages from Fuel Pollution (FIPOL), it is possible to draw inspiration from these solutions to counteract the damages of robots, especially in physical damages that require high resources to compensate for their consequences, and this is what is covered through these funds for this field, and these funds can be financed by producers or owners by deducting a percentage from the price of selling the products. Compensation funds also have many advantages, as they relieve the affected parties from the burden of proof in order to obtain compensation, and they do not expose society to the frightening effects of robots, and they can be considered a complementary system for compulsory insurance against damages to artificial intelligence entities and also relieve the affected parties from the costs of the burden of proof in order to obtain compensation (El-Gamal, 2001, 52-74).

The idea of compensation funds was a backup or complementary means for both the civil liability and insurance systems, and in order to compel companies to pay contributions to these funds, the international community should seek to conclude an agreement to regulate this issue and provide funds to compensate those affected by robots. These funds could be financed by taxes paid by the manufacturers, owners, developers, and users of the robots; in order to ensure that the injured party receives full compensation.

In practice, however, the funds raise concerns about minimizing the effects of the civil liability directive. It does not make sense for it to be superior to it or replace it, in addition to the fact that its administration will require a great effort to develop a thorny set of rules that regulate it. However, it seems to us that the robot

producers bear the burden of insurance and contribute to paying the compensation fund contributions in order to fully face the damages caused by the robots, which may lead them not to work in this field, thus impeding the spread of robots, which we see as the need for the state to intervene as a backup guarantor in case compensation exceeds the financial capacity of those responsible for the robot. This is because it is the state that has allowed the spread of such intelligent entities as well as their importance to society, the state's intervention also enables the victim to obtain full compensation for the damages incurred (Al-Barawi, 2008, 33-76).

Conclusion

First: Results:

1. The legislator has established for people the right to resort to the judiciary in the event that they are harmed in order to obtain their rights. However, resorting to the judiciary is not often considered the most appropriate way or the best way to obtain compensation, as in the case of damage caused by a robot, because of the difficulties in assessing the risks posed by it; for this reason, legislators in many countries need to look for new solutions that enable those affected to obtain compensation without exorbitant costs or great trouble.
2. We have called the compensation by means other than the judicial system automatic compensation, which is insurance and special funds to compensate for the damages resulting from the operation of the robot.

Second: Recommendations:

1. Requiring manufacturers and suppliers of robots to compulsory insurance on these products, in order to protect users of these machines from damages in accordance with the applicable insurance laws.
2. Establishment of special compensation funds as "back-up means" to compensate those affected by the damages of robots that operate with artificial intelligence technology, provided that these funds are funded from taxes imposed on manufacturers and suppliers of robots, provided that there is a maximum limit for compensation from these funds.

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